THE INVENTION CLAIMED IS:

1. A micro device feeder system for providing micro devices in tapes to a production assembly line, comprising:

a mounting plate;

a movable drive plate coupled to the mounting plate;

an input mechanism mounted on the movable drive plate, the input mechanism capable of receiving the micro devices containing tapes;

a drive mechanism for driving the input mechanism; and

a feeder width adjustment mechanism interposed between the mounting plate and the movable drive plate for adjusting the micro device feeder system to accommodate tapes with different widths.

2. The micro device feeder system as claimed in claim 1 including:

a fine adjustment mechanism interposed between the mounting plate and the movable drive plate, the fine adjustment mechanism cooperating with the feeder width adjustment mechanism for making fine adjustments between the mounting plate and the movable drive plate.

3. The micro device feeder system as claimed in claim 1 wherein:

the feeder width adjustment mechanism comprises a multi-position spacer rotatably mounted to the movable drive plate, the multi-position spacer has a plurality of thicknesses, each one of the plurality of thicknesses determines one of a plurality of positions of the movable drive plate with respect to the mounting plate; and

the movable drive plate includes:

a securing device for securing the multi-position spacer to one or another or both of the mounting plate and the movable drive plate at the plurality of positions.

4. The micro device feeder system as claimed in claim 3 wherein:

the movable drive plate includes a mark; and

the multi-position spacer includes a plurality of visual indicators for indicating one of the plurality of positions of the multi-position spacer when one of the plurality of the visual indicators is aligned with the mark.

5. The micro device feeder system as claimed in claim 3 including:

a robotic handling system;

and wherein:

the multi-position spacer is adapted to align the input mechanism with the robotic handling system.

6. The micro device feeder system as claimed in claim 1 wherein:

the movable drive plate includes a first guide mechanism for accommodating the tapes along first edges of the tapes; and

the input mechanism includes:

a guide carrier mounted to the movable drive plate for supporting the tapes; and

a tape guide removably mounted to the guide carrier, the tape guide including a second guide mechanism for accommodating the tapes along second edges of the tapes.

7. The micro device feeder system as claimed in claim 6 wherein:

the guide carrier includes a first plurality of feature sets; and

the tape guide includes a second feature for engaging with one of the first plurality of feature sets on the guide carrier to accommodate tapes with different widths.

8. The micro device feeder system as claimed in claim 6 wherein:

the guide carrier is formed of a ferro-magnetic material; and

the tape guide includes magnets for removably attaching the tape guide to the guide carrier using a magnet force created between the magnets and the ferro-magnetic material.

9. The micro device feeder system as claimed in claim 8 wherein:

each of the first plurality of feature sets includes a plurality of projections; and

the second feature includes a set of openings formed on a bottom side of the tape guide for engaging with the plurality of projections.

10. The micro device feeder system as claimed in claim 1 wherein:

the input mechanism comprises a tape driver on the movable drive plate capable of engaging and advancing the tapes provided to the input mechanism, the tape driver engages the tapes along first edges of the tapes having a plurality of centerlines wherein the tapes have a common centerline; and

the tape driver is movable to accommodate the plurality of centerlines while maintaining the common centerline.

11. The micro device feeder system as claimed in claim 1 including:

a tape driver on the movable drive plate capable of engaging and advancing the tapes provided by the input mechanism;

and wherein:

the tape driver engages the tapes along first edges of the tapes having a plurality of centerlines wherein the tapes have a common centerline;

the tape driver is movable to accommodate the plurality of centerlines while maintaining the common centerline and assuring positive linear movement of the tapes; and

the drive mechanism is mounted on the movable drive plate to remain stationary relative to the tape driver.

12. The micro device feeder system as claimed in claim 1 wherein:

the input mechanism includes:

a cover tape removal mechanism secured to the movable drive plate for removing a cover tape off the tapes to expose the micro devices.

13. The micro device feeder system as claimed in claim 12 wherein:

the input mechanism includes:

a cover tape mechanism for disposing of the removed cover tape; and

a tape-presence sensor assembly disposed between the cover tape removal mechanism and the cover tape mechanism for detecting the removal of the cover tape off the tapes.

14. The micro device feeder system as claimed in claim 13 wherein:

the tape-presence sensor assembly includes:

a slot sensor mounted to the movable drive plate;

a sensor flag plate rotatably mounted to the movable drive plate;

a tape-presence sensor roller rotatably mounted to the sensor flag plate wherein the sensor flag plate is clear of a slot in the slot sensor indicating the removal of the cover tape when the sensor flag plate enters the slot in the slot sensor indicating that the cover tape is not removed or is damaged.

15. A micro device feeder system for providing micro devices in tapes to a production assembly line, comprising:

a mounting plate;

an alignment block slidably mounted to the mounting plate;

a movable drive plate coupled to the mounting plate and slidable with respect thereto;

an input mechanism mounted on the movable drive plate and movable therewith, the input mechanism capable of receiving the micro devices containing tapes, the input mechanism comprising a sprocket and the movable drive plate, the sprocket capable of engaging perforations provided in first edges of the tapes and advancing the tapes provided to the input mechanism;

a drive mechanism for driving the sprocket; and

a feeder width adjustment mechanism for adjusting the micro device feeder system to accommodate tapes with different widths by moving the sprocket relative to a common centerline of the tapes, the feeder width adjustment mechanism including:

a multi-position spacer mounted on one or the other or both of the mounting plate and the movable drive plate and disposed between the movable drive plate and the alignment block, the multi-position spacer cooperating with the alignment block for determining a plurality of positions of the movable drive plate with respect to the mounting plate

.

16. The micro device feeder system as claimed in claim 15 wherein:

the mounting plate includes a mounting surface formed at an angle between the mounting plate and the movable drive plate; and

the alignment block includes an alignment surface formed at an angle to the mounting plate and the movable drive plate to allow the alignment block to be slidably engaged with the mounting surface for positioning the movable drive plate with respect to the mounting plate.

17. The micro device feeder system as claimed in claim 15 wherein:

the movable drive plate includes:

a recess mark;

a securing device; and

the multi-position spacer is rotatably mounted to the movable drive plate, and includes:

a plurality of thicknesses;

a plurality of recesses, each one of the plurality of thicknesses determines one of the plurality of positions of the movable drive plate with respect to the mounting plate, wherein the securing device secures the multi-position spacer to the movable drive plate at the plurality of positions by engaging a respective one of the plurality of recesses; and

a plurality of visual indicators for indicating one of the plurality of positions of the multi-position spacer when one of the plurality of the visual indicators is aligned with the recess mark.

18. The micro device feeder system as claimed in claim 15 including:

a robotic handling system;

and wherein:

the multi-position spacer is adapted to align the input mechanism with the robotic handling system.

19. The micro device feeder system as claimed in claim 15 wherein:

the movable drive plate includes a first guide mechanism for accommodating the tapes along first edges of the tapes; and

the input mechanism includes:

a guide carrier mounted to the movable drive plate for supporting the tapes; and

a tape guide removably mounted to the guide carrier, the tape guide including a second guide mechanism for accommodating the tapes along second edges of the tapes.

20. The micro device feeder system as claimed in claim 19 wherein:

the guide carrier is formed of a ferro-magnetic material and includes:

a first plurality of feature sets, each of the first plurality of feature sets including a plurality of projections; and

the tape guide includes:

magnets for removably attaching the tape guide to the guide carrier; and

a second feature, the second feature including a set of openings formed on a bottom side of the tape guide for engaging with each one of the plurality of feature sets to accommodate tapes with different widths.

21. The micro device feeder system as claimed in claim 15 wherein:

the sprocket engages the tapes along first edges of the tapes having a plurality of centerlines wherein the tapes have a common centerline; and

the sprocket is movable to accommodate the plurality of centerlines while maintaining the common centerline.

22. The micro device feeder system as claimed in claim 15 wherein:

the sprocket engages the perforations of the tapes having a plurality of centerlines wherein the tapes have the common centerline;

the sprocket is movable to accommodate the plurality of centerlines while maintaining the common centerline and assuring positive linear movement of the tapes;

the drive mechanism is mounted on the movable drive plate to remain stationary relative to the sprocket and includes:

a motor secured to the movable drive plate,

a motor pulley on the motor,

a sprocket shaft on the movable drive plate,

a sprocket pulley on the sprocket shaft, and

a belt connected to drive the sprocket pulley from the motor; and

the sprocket is secured to the sprocket pulley.

23. The micro device feeder system as claimed in claim 15 wherein:

the input mechanism includes:

a cover tape removal mechanism secured to the movable drive plate for removing a cover tape off the tapes to expose the micro devices;

a cover tape mechanism for disposing of the removed cover tape; and

a tape-presence sensor assembly disposed between the cover tape removal mechanism and the cover tape mechanism for detecting the removal of the cover tape off the tapes, the tape-presence sensor assembly including:

a slot sensor mounted to the movable drive plate;

a sensor flag plate rotatably mounted to the movable drive plate;

a tape-presence sensor roller rotatably mounted to the sensor flag plate wherein the sensor flag plate is clear of a slot in the slot sensor indicating the removal of the cover tape when the sensor flag plate enters the slot in the slot sensor indicating that the cover tape is not removed or is damaged.